Airlines aren't learning enough from near misses, research says

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When it comes to flight safety, U.S. airlines are pretty good at learning from accidents. But new research shows airlines should be learning more from accidents that never happen.

A new study led by BYU organizational behavior professor Peter Madsen finds that airlines are flying past an opportunity to increase safety by ignoring too many "near misses."

"Studies show pilots or crew members make at least one potentially hazardous error on 68 percent of commercial airline flights, but very few of these errors lead to an accident," Madsen said. "Airlines need to institute policies that encourage learning from these seemingly innocuous near misses."

To be clear, Madsen is not talking about the near misses you see on the news. He and researchers from Georgetown University's McDonough School of Business poured over the safety data of 64 U.S. commercial airlines from 1990 to 2007 to determine where less obvious near-miss incidents were being ignored.

As expected, their study (published in *Risk Analysis*) found airlines improve their safety performance in response to their own accidents and accidents experienced by other airlines. However, airlines only learn from near misses when there are obvious signs of risk.

Specifically, airlines pay attention to near misses that have led to accidents in the past (fire on the plane, ice build-up on wings), but don't look closely at near misses that have yet to cause an accident (airplane rolling on the runway when it should be stopped).

"We're not saying airlines aren't doing a good job—they are paying attention to near misses more than any other industry in the world," Madsen said. "That said, near misses that are considered benign might be

slipping through the cracks."

Examples of "benign" near misses identified by researchers:

- Incapacitation of a flight crew member
- Software or mechanical problems with cockpit displays
- Poor handling of aircraft while decelerating on the runway after touch down
- Traffic congestion on the taxiway during aircraft taxiing
- Nuisance warnings and false alarms.

The researchers suggest airlines can improve in two ways:

- Continue successful data-collection efforts, but expand which near misses are reported.
- Remain vigilant toward deviations from normal and uncover root causes of the deviations.

Madsen said one way airline personnel can improve on the second point is by focusing on events the industry once considered unacceptable but now occur so often that they've come to be accepted as normal.

"It can be hard to learn from near misses because we're wired to ignore them," Madsen said. "But the difference between a near miss and a larger failure may only be good fortune."

More information: Peter Madsen et al. Airline Safety Improvement Through Experience with Near-Misses: A Cautionary Tale, *Risk Analysis* (2015). DOI: 10.1111/risa.12503

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